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(71) Applicant: **Tyco Healthcare Group LP**
Norwalk, Connecticut 06856 (US)

(72) Inventor: **Beetel, Robert J.**
Hamden, CT (US)

(74) Representative: **HOFFMANN EITLE**
Patent- und Rechtsanwälte
Arabellastrasse 4
81925 München (DE)

(54) Surgical instruments employing sensors

(57) According to an aspect of the present disclosure, a surgical instrument (10,100,200,300) for operating on tissue is provided. The surgical instrument includes an end effector including a first tissue engaging member (20) and a second tissue engaging member (22) juxtaposed relation to the first tissue engaging member; a gap determination element (60,62) operatively associated with each of the first tissue engaging member and the second

tissue engaging member for measuring a gap distance between the first tissue engaging member and the second tissue engaging member; and a tissue contact determining element (60,62) operatively associated with a respective tissue contacting surface of at least one of the first tissue engaging member and the second tissue engaging member. The present disclosure also relates to methods of using the surgical instrument.

Tissue Contact Circuit

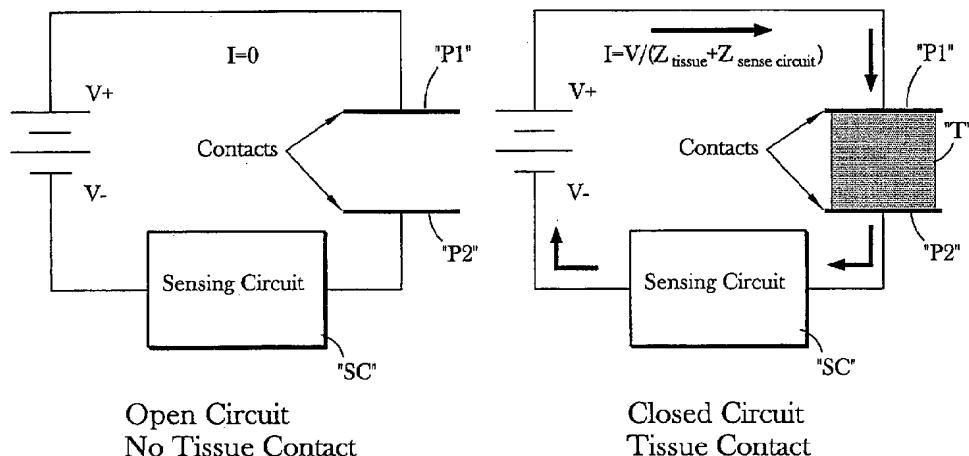


FIG. 20



DOCUMENTS CONSIDERED TO BE RELEVANT			CLASSIFICATION OF THE APPLICATION (IPC)
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	
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The present search report has been drawn up for all claims			
2	Place of search Munich	Date of completion of the search 21 September 2006	Examiner Assion, Jean-Charles
CATEGORY OF CITED DOCUMENTS		T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons R : member of the same patent family, corresponding document	
X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document			

ANNEX TO THE EUROPEAN SEARCH REPORT
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This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.
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